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AUTHOR Bobbett, Gordon C.; And Others
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ABSTRACT

The results of a study of six rural Appalachian high schools in Kentucky and Tennessee are presented. Multiple data sources were used to identify the relative effectiveness of these schools. Data were collected via administration of the: Wayson School Climate and Context Inventory to a stratified random sample of 20 faculty; Likert's Organizational Characteristics to the total faculty; and School Effectiveness Inventory (SEI)--which was developed to evaluate perceptions regarding 16 academic, work-related, and personal school outcomes--to members of the educational community. Data were also collected via observations made during visits to each school and completion of instructional interviews with 10 faculty and one administrator in each school. Responses to the SEI were collected from 237 students, 158 teachers, and 64 business leaders. Mean scores, rankings, and z-scores for the 16 SEI educational outcomes were evaluated. F-scores and "t"-scores compared participant groups. The participant groups had similar educational expectations, and academic and work-related outcomes were more important than personal outcomes. Although school performance outcomes were similar, participant groups perceived their school's performance differently. Students, teachers, and business leaders perceived that academic outcomes, along with ethics/morals, need more emphasis in the school system. Students differed significantly from teachers and business leaders in their perceptions of what schools should be doing and are currently doing. The teachers were the least satisfied and students were the most satisfied with education. Educational expectations and values vary between states and between participant groups. Four data tables, one bar graph are included; the SEI, two tables of mean scores for expectations and performance, and one table and four bar graphs on dissonance scores are attached. (RLC)

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STUDENT, TEACHER, AND BUSINESS LEADER PERCEPTIONS OF ACADEMIC, WORK-RELATED, AND PERSONAL SKILLS IN RURAL APPALACHIAN COMMUNITIES

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Dr. Gordon C. Bobbett
Educational Consultant
Louisville, TN 37777

Dr. Russell L. French
University of Tennessee
Knoxville, TN 37996

Dr. Kenneth Henry
Union College
Barbourville, KY 40906

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> . . . perceptions is all there is. There is no reality as such. There is only perceived reality, the way each of us chooses to perceive a communication, the value of a service, the value of a particular feature, the quality of a product. The real is what we perceive (p. 71).[1]

I. INTRODUCTION

How can local schools be evaluated effectively? In a recent study of six, rural Appalachian high schools in Kentucky and Tennessee[2], investigators attempted to use multiple data sources as the means of identifying and portraying the relative "goodness" of these schools. The schools were selected for the study by using several indicators which included: (1) student performance on state competency tests (2) ACT scores (3) dropout rate (4) percentage of students attending postsecondary institutions, and (5) graduation rate plus the opinions community members that are involved with education (students, teachers, and business leader).

Then, a combination of assessment instruments and strategies were used to gather information about school characteristics. These measures included administration of the ***Wayson School Climate and Context*** Inventory to a stratified, random sample of 20 faculty, administration of the ***Likert's Organizational Characteristics*** to the total faculty, observations "by wandering around" in each school, completion of instructional interviews with 10 faculty and 1 administrator in each school, and the administration of several segments to the education community of an instrument created especially for use in the study.

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[1] Peters, T. J., Austin, N. K. (1985) A passion for excellence. The leadership difference. New York: Random House, Inc.

[2] Bobbett, G.C., Henry, Kenneth, and French, Russell. A study of rural Appalachian high schools (1990), Appalachian Education Laboratory, Charleston, WV.

A. SCHOOL EFFECTIVENESS INVENTORY (SEI)

The SEI (see Appendix A) was developed to evaluate perceptions regarding 16 academic, work-related, and personal school outcomes. The six ACADEMIC outcomes evaluated include the following items [*Students should be able to*]: (1) **Read** and comprehend effectively (2) **Write** effectively (3) Perform **mathematical** calculations effectively (4) **Speak** effectively (5) **Listen** effectively, and (6) **Think critically.** The five WORK-RELATED outcomes evaluated include the following items [*Students should be able to*]: (1) **Follow** tasks to completion (2) **Produce** quality work (3) Work well under **supervision** (4) Contribute **ideas** or offer solutions, and (5) Possess ability to **get along** with others. The five PERSONAL outcomes evaluated include the following items [*Students should be able to*]: (1) Participate in **community activities** (2) Practice **ethical/moral** behavior (3) Maintain **physical health** (4) Participate in the **Arts** and related activities, and (5) Exhibit **good grooming** and dress appropriately.

Two five-point scales were created for each item (5=high, 1=low). On the first scale, respondents were asked to rate the importance of each of the 16 identified outcomes. One the second scale, respondents rated the current performance of their schools in each area.

B. SEI ADMINISTRATION

In each of the six selected school communities, the researchers administered the SEI to three groups of people: (1) students (2) teachers, and (3) business leaders. In all, responses were collected from 237 students, 158 teachers, and 64 business leaders representing the six schools.

C. INTERNAL CONSISTENCY

The Cronbach Alpha was used to estimate the internal consistency for both the expectation and performance SEI data for students, teachers, business leaders, and grand total population for Tennessee's and Kentucky's best rural Appalachian high schools. The

SEI's internal consistency for the grand total expectation part was high (+0.886), and the performance was even higher (+0.930).

As Table 1 illustrates, the SEI's internal consistency for the grand total expectation part was high (0.882), and the performance was even higher (0.930). A small number of respondents omitted either the expectation or performance section. So, the "n" for students, teachers, business leaders or the grand total participants are smaller than the study's total sample (grand total: n=459).

Table 1. Cronbach Alpha was used to analyze the SEI's Expectation and Performance data for students, teachers, business leaders, and total population; Appalachia Educational Laboratory, 1990.

Participant Groups	Expectation n	Expectation Consistency (Cronbach α)	Performance n	Performance Consistency (Cronbach α)
Students	227	.88	220	.92
Teachers	152	.88	145	.93
Business Leaders	63	.89	61	.95
Total	442	.88	426	.93

II. ANALYSES OF DATA

The findings were grouped into five areas which include: (1) expectation analyses (2) performance analyses (3) dissonance analyses (4) z-scores analyses, and (5) analysis of variance (ANOVA) analyses. Mean scores, rankings, and z-scores for each of the 16 SEI educational outcomes were evaluated. F-scores (ANOVA/Scheffe) and t-scores compared participant groups.

Mean rating scores were computed by respondent groups by and state and by total

respondents. In addition, rankings were created for each performance area using a mean ranking procedure.

A. FINDINGS: EXPECTATION

Mean expectation (importance) scores (see Appendix B for detailes) ranged from a low of 3.39 (*arts:* KY/BL) to a high of 4.91 (*reading*: TN/TE). Each outcome was ranked using 1 as the highest rank and 16 as the lowest rank. *Reading* (AC), *producing quality work* (WR), *getting along* (WR), and *following task* (WR)--three work-related outcomes and one academic outcome--had the highest rankings. *Arts* (PR), *community activities* (PR), *offer ideas* (WR), and *work under supervision* (WR)--two work-related outcomes and two personal outcomes--were ranked lowest. Academic outcomes are relatively absent from both the top and bottom rankings.

The mean ranks of totals for each of the three categories were compared. The academic and work-related categories had similar mean ranks ($\bar{X}$=7.5, 7.2, respectively) and were higher than the mean rank for the personal area ($\bar{X}$=11.0).

With few exceptions (see Table 2), rankings of the 16 educational outcomes were similar. When one participant group ranked an outcome either high, medium, or low, other participant groups had similar educational expectations. There were two exceptions: *ethical/moral* and *grooming*. Students ranked *ethics/morals* low (11th) but teachers and others ranked it high (2nd)--a difference of 9 rankings. The students ranked *grooming* high (4th) but the adults (teachers and business leaders) ranked it low (14th)--a difference of 10 rankings.

Table 2 Expetations rankings for students, teachers, business leaders, and total, Appalachia Educational Laboratory, 1990.

	Students	Teachers	Business Leaders	Total
ACADEMIC				
1. Read	1	1	1	1
2. Write	9	8	9.5	9
3. Math	7	9	6	6
4. Speak	10	11	12	12
5. Listen	8	4	7	7
6. Critical Thinking	12	6	8	10
WORK-RELATED				
7. Follow Task	5	3	4	4
8. Prod. Q. Work	3	5	3	2
9. Under Super.	13.5	12	13	13
10. Ideas	13.5	13.5	11	14
11. Get along	2	7	5	3
PERSONAL				
12. Community Act.	15	16	15	15
13. Ethical/moral	11	2	2	5
14. Physical health	6	10	9.5	8
15. Arts	16	15	16	16
16. Grooming	4	14	14	11

B. FINDINGS: PERFORMANCE

Means scores for the performance data were calculated and evaluated for the SEI's 16 educational outcomes and for each of the three general outcome areas (see Appendix C). The mean scores ranged from a high of 3.90 (*produce quality work* (WR): TO/ST) to a low of 2.82 (*Critical Thinking* (AC): KY/TE). Performance outcomes were ranked (see Appendix C). *Getting along* (WR), *work under supervision* (WR), *reading* (AC), and *following task* (WR)--three work-related outcomes and one academic outcome--had the highest grand total rankings across respondent groups and states. *Arts* (PR), *listening* (AC), *critical thinking* (AC), and *speaking* (AC)--three academic outcomes and one personal outcome-- had the lowest rankings.

The means for individual outcomes and categories were compared. The area work-

related received both the highest mean ($\bar{X}$=3.66) and the highest mean rank ($\bar{X}$Rk=4.6) while academic and personal areas produced similar means ($\bar{X}$=3.44, 3.48, respectively) and rankings ($\bar{X}$Rk=10.2, 10.4, respectively).

The SEI rankings for the performance outcomes were consistent among participant groups; some were similar and others different. These similarities and differences were spread among the academic, work-related, and personal categories. The rankings for *speaking* (AC), *listening* (AC), *critical thinking* (AC), *supervision* (WR), *ideas* (WR), *getting along* (WR), *ethics/moral* (PR), and *arts* (PR) demonstrated ranking differences across groups of fewer than eight positions. The other eight outcomes demonstrated variations greater than eight ranking positions. The more exaggerated differences in ranking include *reading* (AC)(1st [KY/ST]-10th [KT/TE]), *writing* (AC)(2nd [TN/ST]-13th [KY/TE]), *math* (AC)(2.5th [KY/BL]-12th [TN/BL]), *produce quality work* (WR)(1st [ST/Total]-11th [KY/TE]), *community activity* (PR)(5th [KY/TE]-16th [TN/ST]), *physical health* (PR)(1st [TN/BL]-13.5th [KY/BL]), and *grooming* (PR)(2.5th [KY/TE]-15th [BL/Total]).

The mean score rankings for each of the three areas were evaluated. Work-related outcomes ranked higher than academic and personal outcomes.

C. FINDINGS: DISSONANCE

The dissonance data represent the differences between the perceived importance and perceived performance (expectation minus performance data). The dissonance data (see Appendix D) includes the means and rankings for the SEI's 16 educational outcomes, and the means and mean ranks for the three general outcome areas. The mean dissonance scores ranged from a high of 1.94 (*Listening*: KY/TE) to a low of 0.21 (*Arts*: KY/ST). Generally, students rated performance closest to importance, teachers perceived the largest difference, and business leaders were in the middle.

The SEI outcomes with the highest dissonance mean scores (mean expectation minus mean performance) and highest rankings (ranking 1-4)) were *listening* (AC), *reading* (AC), *critical thinking* (AC), and *ethics/morals* (PR)--three academic and one personal outcome. The outcomes with the lowest dissonance and highest ranks were *community activity* (PR), *under supervision* (WR), *arts* (PR), and *ideas* (WR)--two personal and two work-related outcomes.

The rankings were analyzed by participant groups. The seven outcomes with a ranking range of nine or more included *writing* (AC), *math* (AC), *speaking* (AC), *critical thinking* (AC), *getting along* (WR), *physical health* (PR), and *grooming* (PR)--four academic, one work-related, and two personal. The SEI's other nine outcomes had a smaller ranking difference (nine or less) between participant groups.

The mean ranks for each of the three general outcome areas were compared. The academic mean ranking ($\bar{X}$Rk=4.83) was higher than either work-related or personal ($\bar{X}$=10.0, 11.4, respectively). This existed for all participant groups--students, teachers, and business leaders.

Participant group dissonance data were evaluated. When the Kentucky and Tennessee students dissonance data were compared (see Appendix E-1 and E-2), all 16 outcomes were less that 1.0 in both states. *Arts* (PR) had the lowest mean dissonance ($\bar{X}$=0.21) and *grooming* (PR) had the highest mean dissonance ($\bar{X}$=0.94), with a dissonance range of 0.71. Kentucky students had the smallest dissonance for 10 outcomes, and Tennessee students for 6 outcomes. When the Kentucky and Tennessee teacher dissonance data were compared, *Listening* (AC) had the highest mean dissonance in both states ($\bar{X}$=1.94) and *community activity* (PR) had the lowest mean dissonance ($\bar{X}$=0.52), with a dissonance range of 1.42. Also, 22 of the 32 Kentucky and Tennessee teacher dissonance outcomes were larger than 1.0. The Kentucky teachers had the highest dissonance for 14 of 16 outcomes. The Kentucky and Tennessee business leaders dissonance outcomes were

evaluated. *Reading* (AC) and *community activity* (PR) had the largest dissonance in both states ($\bar{X}$=1.35), *under supervision* ($\bar{X}$=0.38) and *arts* ($\bar{X}$=0.39) had the smallest dissonance, with a range of 0.97. Kentucky business leaders had the largest dissonance for nine outcomes and Tennessee business leaders had the largest for seven. Student, teacher, and business leader SEI data were grouped by state. The largest dissonance was *speaking* ($\bar{X}$=1.40) (AC) and the smallest was *community activity* ($\bar{X}$=0.35) (PR), with a range of 1.05. Every Kentucky dissonance outcome was larger that the Tennessee outcome.

D. FINDINGS: Z-SCORE

After developing mean rankings for each of the 16 SEI items on both scores (importance, performance), z-scores were used to evaluate the differences between the grand total mean score for the expectation, performance, and dissonance data. As Figure 1 illustrates, the greatest dissonance in the form of deviation from the mean rank was produced in four academic and one personal areas. The four academic areas (*reading, speaking, listening,* and *critical thinking*) were about one standard deviation above the mean of the grand total mean scores. *Ethics/morals*, ranked 4th, was the sole exception to the four academic outcomes. Furthermore, the four lowest z-scores (least dissonance in rankings) were work-related or personal educational outcomes (*community activity, under supervision, arts, ideas*), and were approximately one and a half standard deviations below the mean of the grand total mean scores.

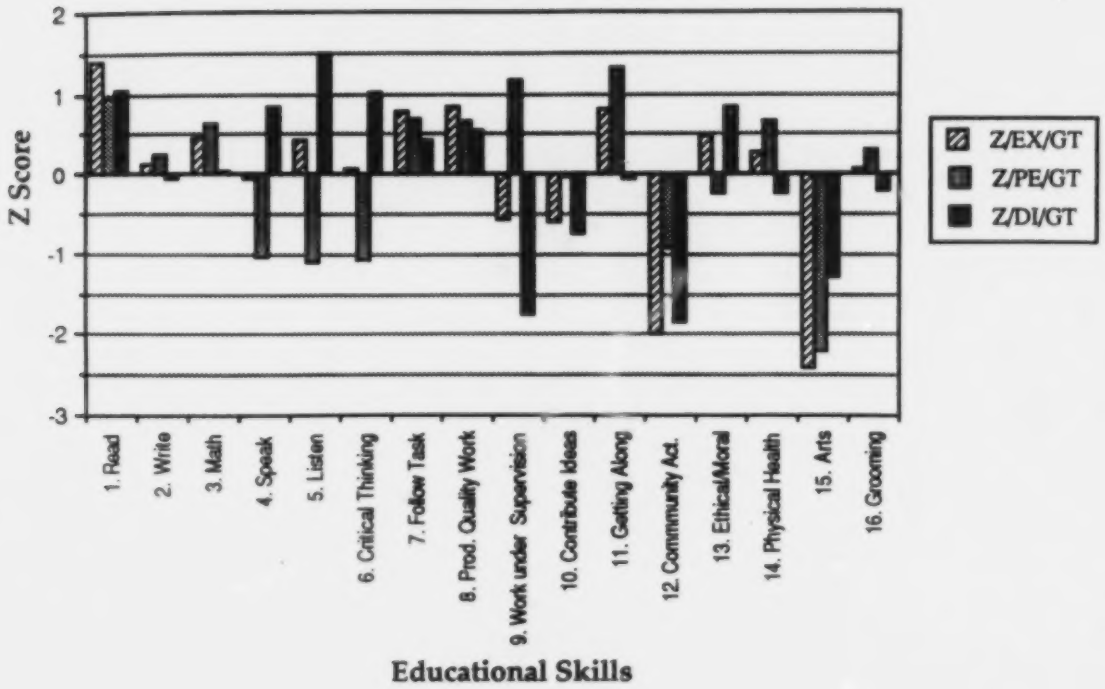


Figure 1 Z-score analyses used to evaluate the SEI item's Grand Total (GT) Expectation, (EX), Performance (PE), and Dissonance (DI) mean outcomes.

E. SIMILARITIES AND DIFFERENCES AMONG PARTICIPANT GROUPS.

The ANOVA was used to compare the similarities and differences among the participant groups.

The ANOVA was used to compare the expectations among students, teachers and business leaders in the Kentucky's and Tennessee's school communities. The Scheffe F-test identified the differences. The t-test was used to compare Kentucky and Tennessee participant groups.

1. Expectation Analyses

The ANOVA was used to compare the mean expectation differences between students, teachers and business leaders for Kentucky and Tennessee participant groups. Table 3 illustrates that the largest ANOVA F-score for Kentucky was *ethics/moral*, the largest F-scores for Tennessee were *listening*, *math*, and *ethics/morals*, and the largest F-scores for Kentucky and Tennessee collectively were *reading, math, listen, critical thinking*, and *ethics/morals*--four academic and one personal outcomes.

Kentucky **students** and **teachers** had significantly different academic expectations on four academic outcomes (*read, write, listen, and critical thinking*) and two personal outcomes (*ethics/moral, grooming).* In Tennessee, students and teachers were significantly different on five academic outcomes (*read, write, math, listen, and critical thinking*), all work-related outcomes, and three personal outcomes *(ethics/morals, physical health, and arts).* When evaluating the grand totals, the students were significantly different from the teachers on all academic outcomes, all work-related outcomes except for *getting along*, and one personal outcome *(ethics/morals).*

Kentucky **students** and **business leaders** were significantly different for three personal outcomes *(ethics/morals, arts, and grooming),* but in Tennessee, there were no significant differences between students and business leaders. From a grand total perspective, students were significantly different for one academic outcome *(math)* and two personal outcomes *(ethics/morals and grooming).*

Kentucky **teachers** and **business leaders** were not significantly different on any outcome; however, in Tennessee, they were significantly different on two academic outcomes *(listen and critical thinking),* one work-related outcome *(produce quality work)* and one personal outcome *(physical health).* Collectively, teachers and business leaders were significantly different on four academic outcomes *(write, speak, listen, and critical*

Table 3 The SIE expectation data for Kentucky (KY) and Tennessee (TN) high school students (ST), teachers (TE), and business leaders (BL) representing "good" rural Appalachian high schools.

OUTCOMES	*F-test* KY ST/TE/BL	*F-test* TN ST/TE/BL	*F-test* GT ST/TE/BL	*t-test* KY/TN *p*
Academic				
1 Read	4.344 * 1	8.600 * 1	11.678 * 1	.0097 *
2 Write	4.323 * 1	6.299 * 1	10.404 * 1, 3	.0085 *
3 Math	2.839	11.924 * 1	14.009 * 1, 2	.0001 *
4 Speak	2.924	4.552	5.805 * 1, 3	.1221
5 Listen	5.549 * 1	13.030 * 1, 3	17.839 * 1, 3	.0255 *
6 Critical Thinking	5.388 * 1	8.403 * 1, 3	14.295 * 1, 3	.0410 *
Work-related				
7 Follow Task	2.276	9.626 * 1	10.932 * 1	.0597
8 Prod. Q. Work	.237	4.024 * 1	3.257 * 1	.0810
9 Under super.	.335	9.075 * 1, 3	5.654 * 1	.0747
10 Ideas	2.083	3.187 * 1	5.437 * 1	.0471 *
11 Getting along	.124	1.427 * 1	.906	.0912
Personal				
12 Community act.	2.220	.626	2.025	.0198 *
13 Ethical/moral	12.974 * 1, 2	11.525 * 1	24.696 * 1, 2	.1306
14 Physical health	1.298	5.276 * 1, 3	2.976 *	.0118 *
15 Arts	3.455 * 2	3.701 * 1	4.088 * 3	.0036 **
16 Grooming	7.169 * 1, 2	1.518	4.592 * 2	.0665
Total: 1's=ST v. TE	**6**	**13**	**11**	
Scheffe 2's=ST v. BL	**3**	**0**	**3**	
3's=TE v. BL	**0**	**4**	**5**	
Total/t-test				**9**

* $p \leq .05$ (ANOVA, t-test)
** $p \leq .01$ t-test)

Scheffe, $p \leq .05$: 1=ST v. TE
2=ST v. BL
3=TE v. BL

thinking) and one personal outcome *(arts)*. Students were significantly different from teachers twice as much as they were from business leaders or as teachers were from business leaders.

The t-test was used to compare Kentucky and Tennessee participant groups. Kentucky and Tennessee participant groups were significantly different on five academic outcomes

(*read, write, math, listening,* and *critical thinking*), one work-related outcome *(ideas)*, and three personal outcomes (*community activity, physical health*, and *arts*). Kentucky and Tennessee participant groups were significantly different for 9 of 16 educational outcomes--4 academic, 1 work-related, and 3 personal.

2. Performance data

The ANOVA was used to compare the performance differences among the students, teachers, and business leaders for Kentucky and Tennessee participant groups. Table 4 illustrates that the largest ANOVA F-scores for Kentucky were *writing* and *producing quality work*, the largest for Tennessee were *critical thinking* and *arts*, and the largest for the Tennessee and Kentucky collectively were *critical thinking, producing quality work*, and *writing*.

Kentucky **students** were significantly different from **teachers** on four academic outcomes (*read, write, speak, critical thinking*) and one work-related outcome (*produce quality work*). Tennessee students were significantly different from teachers for all six academic outcomes, two work-related outcomes (*follow task, produce quality work),* and one personal outcome (*arts*). When evaluating the grand totals, the students were significantly different from the teachers on all six academic outcomes, two work-related outcomes (*follow task, produce quality work)* and one personal outcome *(arts).*

There was no significant difference on any outcome between Kentucky **students** and **business leaders**. Tennessee students and business leaders were significantly different on one academic outcome (*math*) and one personal outcome (*arts*). The arts was the only outcome where students and business leaders were significantly different on a grand total basis.

There was no significant difference between Kentucky students and business leaders or between teachers and business leaders for any educational outcome. Tennessee's

teachers and **business leaders** were significantly different on one academic outcome (*critical thinking*), while on a grand total perspective, they were significantly different on two academic outcomes (*speak, critical thinking*).

Generally, students were significantly different from teachers three times more often than students and business leaders or teachers and business leaders differed. Kentucky, Tennessee and grand total ANOVA F-scores were similar within each outcome area.

When using the t-test to compare Kentucky and Tennessee participants for each of the 16 outcomes, 10 of the 16 outcomes were significantly different : 5 academic, 4 work-related, and 1 personal.

Table 4 The SIE performance data for Kentucky (KY) and Tennessee (TN) high school students (ST), teachers (TE), and business leaders (BL) representing "good" rural Appalachian high schools.

OUTCOMES	*F-test* KY ST/TE/BL	*F-test* TN ST/TE/BL	*F-test* GT ST/TE/BL	*t-test* KY/TN *p*
Academic				
1 Read	9.091 * 1	2.840 * 1	10.657 * 1	.0255 *
2 Write	12.287 * 1	9.855 * 1	20.485 * 1	.0008 **
3 Math	2.393	5.531 * 1, 2	5.875 * 1	.0018 **
4 Speak	4.968 * 1	3.574 * 1	7.189 * 1, 3	.0321 *
5 Listen	2.908	5.735 * 1	7.700 * 1	.0010 **
6 Critical Thinking	7.082 * 1	14.975 * 1, 3	20.962 * 1, 3	.0770
Work-related				
7 Follow Task	3.599	6.131 * 1	8.823 * 1	.0264 *
8 Prod. Q. Work	12.085 * 1	9.686 * 1	20.871 * 1	.0217 *
9 Under super.	.359	.180	.400	.0521
10 Ideas	.789	2.548	2.762	.0284 *
11 Getting along	.655	.270	.234	.0321 *
Personal				
12 Community act.	.042	3.362	1.608	.2501
13 Ethical/moral	1.487	.000	.630	.0661
14 Physical health	.932	2.909	.835	.0019 **
15 Arts	1.891	12.201 * 1, 2	11.967 * 1, 2	.1722
16 Grooming	2.024	.954	2.362	.4003
Total: 1's=ST v. TE	**5**	**9**	**9**	
Scheffee 2's=ST v. BL	**0**	**2**	**1**	
3's=TE v. BL	**0**	**1**	**2**	
Total/t-test				**10**

* $p \leq .05$ (ANOVA, t-test) Scheffe, $p \leq .05$: 1=ST v. TE
** $p \leq .01$ (t-test) 2=ST v. BL
3=TE v. BL

IV. CONCLUSIONS

A. Participant groups had similar educational expectations, and academic and work-related outcomes were more important than personal outcomes.

The SEI's 16 academic outcome areas for students, teachers, and others were ranked similarly. There was generally little difference between one participant group's outcome mean score or rankings and another participant group (i.e., $\approx \pm 2$ difference) . That is, when one participant group ranked an outcome high, the other also ranked it high (see Appendix C).

Interestingly, respondent groups demonstrated greatest differences in the importance they assigned to personal development areas. Where teachers and business leaders (adults) ranked *ethics/morals* high, students ranked it low, and where students ranked *grooming* high, adults ranked it low.

B . Although school performance outcomes appear similar (ACT/SAT, dropout rate), participant groups perceived their school's performance differently.

When the schools were initially selected, there were only small differences from school to school in ACT/SAT scores, dropout rates, and percentages of students pursuing a post-secondary education. However, SEI scores do not demonstrate the same similarity. Where one group ranked a outcome high, another ranked it medium, and another low. On an individual outcome basis, each participant group perceived the performance outcomes differently.

Although there existed a wide range in performance ranking among praticipant groups for many SEI areas; each participant group seemed to evaluate its school's strengths (i.e., consistency within goups) and weaknesses differently (i.e., differences between groups). Generally, participant groups in each state ranked outcome areas similarly: students from

Tennessee were similar to students in Kentucky, teachers similar to other teachers, and business leaders were similar to business leaders in the other state.

Further, each participant group--students, teachers, or business leaders-- had different viewpoints regarding specific outcomes. Possibly age, gender, or occupation influenced their perception of the school's performance. Did each group have a different educational agenda? Each participant group's involvement in the educational process (or unique vantage point regarding what is or is not taught) possibly influenced their perception of the school's performance.

C. Students, teachers, and business leaders perceive that academic outcomes, along with *ethics/morals*,need more emphasis in the school system.

It appears that many people in rural Appalachia relate their living conditions and social problems to their educational system--more specifically, to the academic outcomes identified in the SEI. Also, the media often compare the academic outcomes of Appalachian students with other regions of the country and relates the area's deficient fundamental academic outcomes with the reality of living in a monetarily depressed region. The researchers noted that the rural Appalachian populace often assumed that academic outcome improvement produces a higher standard of living.

Four of the five outcomes with the largest mean difference between expectation and performance SEI item data were academic outcomes--*listening, reading, critical thinking,* and *speaking*. Students, teachers, and business leaders desire stronger academic programs. Note that the work-related and personal categories generated similar but dramatically different differences between expectations and performance.

The SEI item *Ethics/morals* was the sole non-academic item that was perceived as needing improvement. When comparing students', teachers', and business leaders'

expectations, *ethics/morals* reflected the largest non-academic dissonance. In particular, ethics/morals had the highest dissonance among business leaders. Apparently, business leaders are greatly concerned about the *ethical/moral* values individuals bring to the workplace. Perhaps they agree with the analyses of Francis Schaeffer and Edward Gibbon:

> Edward Gibbon (1737-1794) in his *Decline and Fall of the Roman Empire* (1776-1788) said that the following five attributes marked Rome at its end: (1) a mounting love of show and luxury (that is, affluence); (2) a widening gap between the very rich and the very poor (this could be among countries in the family of nations as well as in a single nation); (3) an obsession with sex; (4) freakishness in the arts, masquerading as originality, and enthusiasms pretending to be creativity; and (5) an increased desire to live off the state. It all sounds so familiar. We have come a long road . . . and we are back in Rome. (p. 226)

D. Students differ significantly from teachers and business leaders in their perceptions of what schools should be doing and what they are currently doing.

Collectively, students have significantly different expectation values for both academic and work-related outcomes. Five of the six academic outcomes were ranked differently by students, and three of the five personal outcomes received different ratings and rankings. Again, age, experience and perceptions of the role of education appear to influence responses generally.

E. The teachers appear to be the most dissatisfied, and students appear to be the most satisfied with education.

The teachers had twice as much dissatisfaction with the 16 SEI outcomes than did students, and business leaders had 50% more dissatisfaction than did students. In addition, Kentucky students were less satisfied than Tennessee students (12 to 4 SEI outcomes, respectively), but the Kentucky and Tennessee teachers (14 to 2, respectively) and business leaders (9 to 7, respectively) were the more satisfied.

Teachers are the professionally trained adults directly responsible for teaching the

students the educational outcomes. They are the participant group that has specialized insights that students and business leaders do not have. Posibly, teachers can see the total educational spectrum while students and business leaders do not.

F. Educational expectations and values vary somewhat from state to state, and from participant group to participant group.

When responses of Kentucky and Tennessee participants were compared, the mean outcomes were significantly different for 9 of 16 expectation outcomes, and 10 of 16 performance outcomes.

While these differences are not surprising, they pose interesting issues and questions. Because people in American society are now highly mobile, a student can graduate form school in one state, but live and work in another. What are the implications of significantly different educational values from state to state for that individual? To what extent can American society accept and accommodate these differences? What responsibility do business leaders and educators have to engage in dialogue about educational ends and means beyond state boundaries?

SCHOOL EFFECTIVENESS INVENTORY

The following survey is part of a research project to identify excellent high schools in the Appalachian regions of Kentucky and Tennessee. Your responses to the items in this survey will play a key role in the completion of this important research. Thank you for your participation.

Instructions

The following items are intended to determine what you feel is important for your high school to do and how well your high school is performing in relation to what you feel is important. Notice that there are two scales following each item on the survey. On the first scale [**A**] fill in the box that best fits your opinion as to the importance of the item. On the second scale [**B**] fill in the box that best fits your opinion as to how well your high school is performing in relation to the item.

Items			**A** Personal Importance Least → Most					**B** Local High School Poor → Excellent				
Students should be able to:			1	2	3	4	5	1	2	3	4	5
Academic	1.	Read and comprehend effectively	○	○	○	○	○	○	○	○	○	○
	2.	Write effectively	○	○	○	○	○	○	○	○	○	○
	3.	Handle mathematical calculations effectively	○	○	○	○	○	○	○	○	○	○
	4.	Speak effectively	○	○	○	○	○	○	○	○	○	○
	5.	Listen effectively	○	○	○	○	○	○	○	○	○	○
	6.	Think critically	○	○	○	○	○	○	○	○	○	○
Work	7.	Follow tasks to completion	○	○	○	○	○	○	○	○	○	○
	8.	Produce quality work	○	○	○	○	○	○	○	○	○	○
	9.	Work well under supervision	○	○	○	○	○	○	○	○	○	○
	10.	Contribute ideas or offer solutions	○	○	○	○	○	○	○	○	○	○
	11.	Possess ability to get along with others	○	○	○	○	○	○	○	○	○	○
Personal	12.	Participate in community activities	○	○	○	○	○	○	○	○	○	○
	13.	Practice ethical /moral behavior	○	○	○	○	○	○	○	○	○	○
	14.	Maintain physical health	○	○	○	○	○	○	○	○	○	○
	15.	Participate in the Arts and related activities	○	○	○	○	○	○	○	○	○	○
	16.	Exhibit good grooming and dress appropriately	○	○	○	○	○	○	○	○	○	○

If you would like to make further comments concerning your high school, please do so in the space below (use the back of the page if necessary).

APPENDIX B

EXPECTATIONS
MEAN SCORES

SKILLS	Students KY	Students TN	Students Total	Teachers KY	Teachers TN	Teachers Total	Business Leaders KY	Business Leaders TN	Business Leaders Total	State KY	State TN	GT
Academic												
1 Read	4.55	4.75	4.64	4.91	4.91	4.91	4.87	4.73	4.78	4.81	4.68	4.75
2 Write	4.15	4.41	4.29	4.61	4.64	4.63	4.17	4.34	4.28	4.48	4.31	4.41
3 Math	4.44	4.40	4.42	4.60	4.62	4.61	4.39	4.56	4.50	4.50	4.23	4.49
4 Speak	4.16	4.39	4.28	4.56	4.52	4.54	4.30	4.17	4.22	4.40	4.31	4.36
5 Listen	4.16	4.42	4.30	4.82	4.75	4.78	4.30	4.49	4.42	4.55	4.40	4.48
6 Critical Think.	4.15	4.32	4.24	4.66	4.66	4.66	4.17	4.38	4.30	4.45	4.32	4.39
Work-related												
7 Follow Task	4.32	4.56	4.45	4.84	4.74	4.79	4.57	4.59	4.58	4.62	4.52	4.58
8 Prod. Q. Work	4.43	4.61	4.53	4.75	4.67	4.70	4.52	4.63	4.59	4.64	4.55	4.60
9 Under super.	3.96	4.24	4.11	4.55	4.31	4.41	3.95	4.34	4.20	4.28	4.16	4.23
10 Ideas	4.02	4.19	4.11	4.36	4.41	4.39	4.17	4.27	4.23	4.28	4.15	4.22
11 Get along	4.49	4.64	4.57	4.67	4.64	4.65	4.44	4.59	4.53	4.63	4.54	4.59
Personal												
12 Community act.	3.67	3.87	3.77	3.85	3.89	3.87	3.78	4.20	4.05	3.93	3.74	3.85
13 Ethical/moral	4.20	4.31	4.26	4.85	4.80	4.82	4.52	4.66	4.61	4.54	4.45	4.50
14 Physical health	4.24	4.58	4.42	4.63	4.50	4.55	4.09	4.39	4.28	4.52	4.35	4.45
15 Arts	3.43	3.94	3.71	3.90	3.90	3.90	3.39	3.49	3.45	3.86	3.58	3.74
16 Grooming	4.32	4.62	4.48	4.39	4.32	4.35	4.00	4.22	4.14	4.45	4.31	4.39
n =	**111**	**126**	**237**	**67**	**91**	**158**	**23**	**41**	**64**	**258**	**201**	**459**
AREA				**Mean**								
Academic	4.3	4.4	4.4	4.7	4.7	4.7	4.4	4.4	4.4	4.5	4.4	4.5
Work-related	4.2	4.4	4.4	4.6	4.6	4.6	4.3	4.5	4.4	4.5	4.4	4.4
Personal	4.0	4.3	4.1	4.3	4.3	4.3	4.0	4.2	4.1	4.3	4.1	4.2
Academic				**RANK**								
1 Read	1	1	1	1	1	1	1	1	1	1	1	1
2 Write	11	8	9	9	7.5	8	10	10.5	9.5	10	9	9
3 Math	3	9	7	10	9	9	6	6	6	12	8	6
4 Speak	10	10	10	11	10	11	7.5	15	12	9	12	12
5 Listen	9	7	8	4	3	4	7.5	7	7	6	5	7
6 Critical Think.	12	11	12	7	6	6	10	9	8	8	10	10
Work-related												
7 Follow Task	6	6	5	3	4	3	2	4.5	4	4	4	4
8 Prod. Q. Work	4	4	3	5	5	5	3.5	3	3	2	2	2
9 Under super.	14	13	13.5	12	14	12	14	10.5	13	13	13	13
10 Ideas	13	14	13.5	14	12	13	10	12	11	14	14	14
11 Get along	2	2	2	6	7.5	7	5	4.5	5	3	3	3
Personal												
12 Community act.	15	16	15	16	16	16	15	14	15	15	15	15
13 Ethical/moral	8	12	11	2	2	2	3.5	2	2	5	6	5
14 Physical health	7	5	6	8	11	10	12	8	9.5	7	7	8
15 Arts	16	15	16	15	15	15	16	16	16	16	16	16
16 Grooming	5	3	4	13	13	14	13	13	14	11	11	11
AREA				**Mean Rank for each area**								
Academic	7.7	7.7	7.8	7.0	6.1	6.5	7.0	8.1	7.3	7.7	7.5	7.5
Work-related	7.8	7.8	7.4	8.0	8.5	8.0	6.9	6.9	7.2	7.2	7.2	7.2
Personal	10.2	10.2	10.4	10.8	11.4	11.4	11.9	10.6	11.3	10.8	11.0	11.0

APPENDIX C

PERFORMANCE
MEAN SCORES

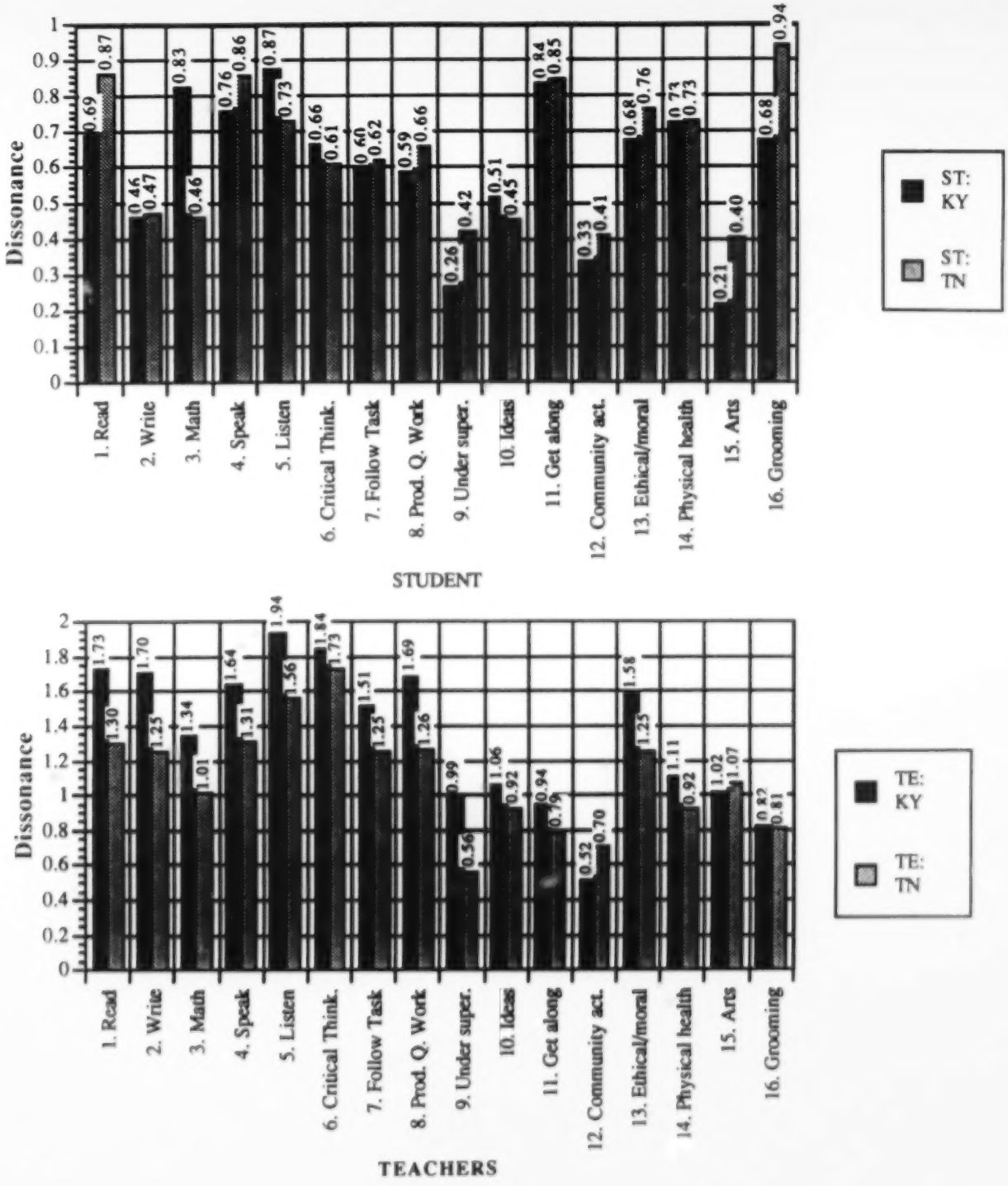
	Students			Teachers			Business leaders			State		GT
SKILLS	**KY**	**TN**	**Total**	**KY**	**TN**	**Total**	**KY**	**TN**	**Total**	**KY**	**TN**	
Academic												
1 Read	3.86	3.89	3.87	3.18	3.62	3.43	3.52	3.74	3.66	3.60	3.77	3.69
2 Write	3.69	3.94	3.83	2.91	3.39	3.19	3.39	3.62	3.53	3.40	3.70	3.57
3 Math	3.61	3.94	3.78	3.26	3.61	3.47	3.52	3.49	3.50	3.49	3.75	3.64
4 Speak	3.41	3.53	3.47	2.93	3.21	3.09	3.35	3.56	3.48	3.24	3.42	3.34
5 Listen	3.29	3.69	3.50	2.88	3.19	3.06	3.26	3.44	3.37	3.15	3.48	3.33
6 Critical Think.	3.48	3.72	3.61	2.82	2.93	2.88	3.39	3.51	3.47	3.25	3.41	3.34
Work-related												
7 Follow Task	3.72	3.94	3.84	3.33	3.48	3.42	3.26	3.62	3.48	3.54	3.73	3.64
8 Prod. Q. Work	3.85	3.95	3.90	3.06	3.41	3.26	3.39	3.72	3.60	3.53	3.72	3.64
9 Under super.	3.70	3.82	3.76	3.57	3.75	3.67	3.57	3.82	3.73	3.64	3.79	3.73
10 Ideas	3.51	3.74	3.63	3.30	3.48	3.41	3.35	3.44	3.41	3.42	3.60	3.52
11 Get along	3.65	3.79	3.73	3.73	3.85	3.80	3.44	3.92	3.74	3.65	3.83	3.75
Personal												
12 Community act.	3.33	3.46	3.40	3.33	3.19	3.25	3.26	3.66	3.51	3.33	3.39	3.36
13 Ethical/moral	3.52	3.55	3.54	3.27	3.55	3.43	3.17	3.55	3.41	3.40	3.55	3.48
14 Physical health	3.52	3.85	3.69	3.52	3.58	3.55	3.17	3.95	3.66	3.48	3.77	3.64
15 Arts	3.22	3.54	3.39	2.88	2.83	2.85	3.00	2.85	2.90	3.08	3.18	3.14
16 Grooming	3.65	3.68	3.67	3.57	3.52	3.54	3.13	3.46	3.34	3.56	3.59	3.58
n=	**111**	**126**	**237**	**67**	**91**	**158**	**23**	**41**	**64**	**258**	**201**	**459**
AREA				**Mean**								
Academic	3.56	3.79	3.68	3.00	3.32	3.19	3.41	3.56	3.50	3.35	3.59	3.48
Work-related	3.68	3.85	3.77	3.40	3.59	3.51	3.40	3.70	3.59	3.56	3.74	3.66
Personal	3.45	3.62	3.54	3.31	3.33	3.32	3.15	3.49	3.36	3.37	3.50	3.44
Academic				**RANK**								
1 Read	1	5	2	10	3	6	2.5	4	3.5	3	3	3
2 Write	5	2	4	13	11	12	6	7.5	6	10	8	9
3 Math	8	4	5	9	4	5	2.5	12	8	7	5	7
4 Speak	13	15	14	12	12	13	8.5	9	9.5	14	13	13
5 Listen	15	11	13	14.5	13	14	11	14.5	14	15	12	15
6 Critical Think.	12	10	11	16	15	15	6	11	11	13	14	14
Work-related												
7 Follow Task	3	3	3	6	9	8	11	7.5	9.5	5	6	4
8 Prod. Q. Work	2	1	1	11	10	10	6	5	5	6	7	6
9 Under super.	4	7	6	2.5	2	2	1	3	2	2	2	2
10 Ideas	11	9	10	7	8	9	8.5	14.5	13	9	9	10
11 Get along	6.5	8	7	1	1	1	4	2	1	1	1	1
Personal												
12 Community act.	14	16	15	5	14	11	11	6	7	12	15	12
13 Ethical/moral	9	13	12	8	6	7	13.5	10	12	11	11	11
14 Physical health	10	6	8	4	5	3	13.5	1	3.5	8	4	5
15 Arts	16	14	16	14.5	16	16	16	16	16	16	16	16
16 Grooming	6.5	12	9	2.5	7	4	15	13	15	4	10	8
				Mean Rank for each area								
Academic	9.0	7.8	8.2	12.4	9.7	10.8	6.1	9.7	8.7	10.3	9.2	10.2
Work-related	5.3	5.6	5.4	5.5	6.0	6.0	6.1	6.4	6.1	4.6	5.0	4.6
Personal	11.1	12.2	12.0	6.8	9.6	8.2	13.8	9.2	10.7	10.2	11.2	10.4

APPENDIX D

DISSONANCE
(Expectation [EX] minus Performance [PE])

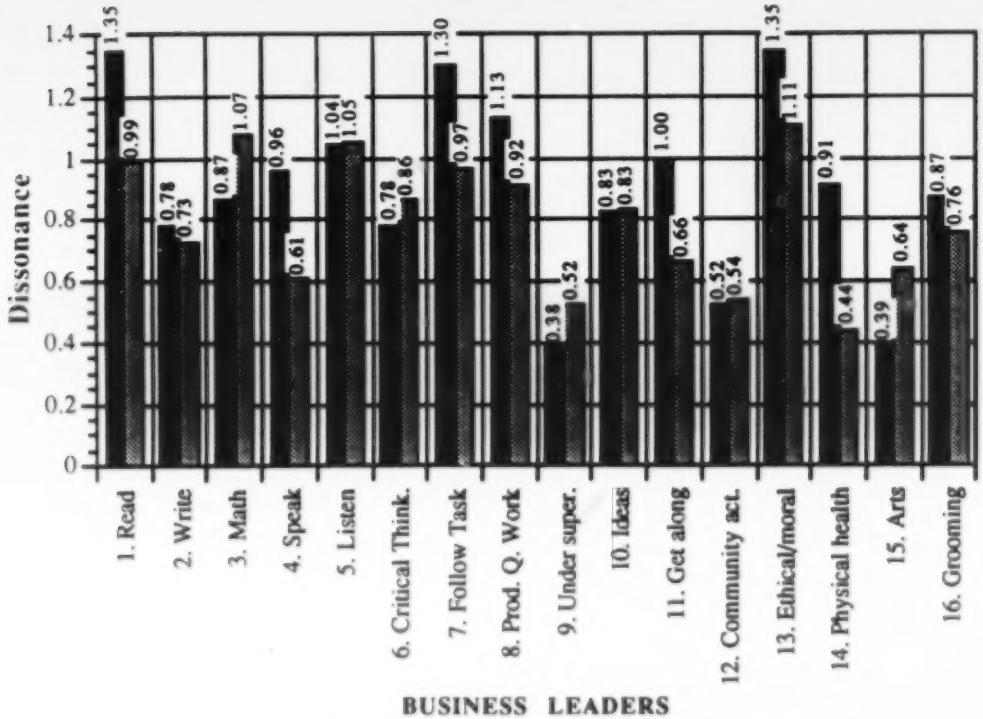
SKILLS	Students			Teachers			Business leaders			State		GT
	KY	TN	Total	KY	TN	Total	KY	TN	Total	KY	TN	
Academic												
1 Read	0.69	0.87	0.76	1.73	1.30	1.48	1.35	0.99	1.12	1.21	0.91	1.06
2 Write	0.46	0.47	0.47	1.70	1.25	1.44	0.78	0.73	0.75	1.08	0.61	0.84
3 Math	0.83	0.46	0.63	1.34	1.01	1.15	0.87	1.07	1.00	1.02	0.48	0.86
4 Speak	0.76	0.86	0.81	1.64	1.31	1.45	0.96	0.61	0.74	1.16	0.89	1.02
5 Listen	0.87	0.73	0.80	1.94	1.56	1.72	1.04	1.05	1.05	1.40	0.92	1.15
6 Critical Think.	0.66	0.61	0.63	1.84	1.73	1.78	0.78	0.86	0.83	1.20	0.91	1.05
Work-related												
7 Follow Task	0.60	0.62	0.61	1.51	1.25	1.37	1.30	0.97	1.09	1.09	0.79	0.94
8 Prod. Q. Work	0.59	0.66	0.62	1.69	1.26	1.44	1.13	0.92	1.00	1.11	0.82	0.96
9 Under super.	0.26	0.42	0.35	0.99	0.56	0.74	0.38	0.52	0.48	0.64	0.37	0.50
10 Ideas	0.51	0.45	0.48	1.06	0.92	0.98	0.83	0.83	0.83	0.86	0.55	0.70
11 Get along	0.84	0.85	0.84	0.94	0.79	0.86	1.00	0.66	0.79	0.98	0.71	0.84
Personal												
12 Community act.	0.33	0.41	0.36	0.52	0.70	0.63	0.52	0.54	0.54	0.61	0.35	0.48
13 Ethical/moral	0.68	0.76	0.72	1.58	1.25	1.39	1.35	1.11	1.20	1.14	0.90	1.02
14 Physical health	0.73	0.73	0.73	1.11	0.92	1.00	0.91	0.44	0.62	1.04	0.59	0.81
15 Arts	0.21	0.40	0.32	1.02	1.07	1.04	0.39	0.64	0.55	0.78	0.40	0.60
16 Grooming	0.68	0.94	0.82	0.82	0.81	0.81	0.87	0.76	0.80	0.89	0.72	0.81
n =	111	126	237	67	91	158	23	41	64	258	201	459
					Mean							
Academic	0.71	0.66	0.68	1.70	1.36	1.50	0.96	0.88	0.91	1.18	0.79	1.00
Work-related	0.56	0.60	0.58	1.24	0.96	1.08	0.93	0.78	0.84	0.94	0.65	0.79
Personal	0.52	0.65	0.59	1.01	0.95	0.97	0.81	0.70	0.74	0.89	0.59	0.74
					RANK							
Academic												
1 Read	6	2	5	3	4	3	1	4	2	2	2	2
2 Write	13	11	13	4	8	6	13	10	11	11	8	10
3 Math	3	12	9	9	10	9	10	2	5	5	10	8
4 Speak	4	3	3	6	3	4	7	13	12	12	4	5
5 Listen	1	7	4	1	2	2	5	3	4	4	1	1
6 Critical Think.	9	10	8	2	1	1	12	7	7	7	3	3
Work-related												
7 Follow Task	10	9	11	8	7	8	3	5	3	3	7	7
8 Prod. Q. Work	11	8	10	5	5	5	4	6	6	6	6	6
9 Under super.	15	14	15	13	16	15	16	15	16	16	15	15
10 Ideas	12	13	12	11	11	12	11	8	8	8	13	13
11 Get along	2	4	1	14	14	13	6	11	10	10	11	9
Personal												
12 Community act.	14	15	14	16	15	16	14	14	15	15	16	16
13 Ethical/moral	7.5	5	7	7	6	7	2	1	1	1	5	4
14 Physical health	5	6	6	10	12	11	8	16	13	13	9	12
15 Arts	16	16	16	12	9	10	15	12	14	14	14	14
16 Grooming	7.5	1	2	15	13	14	9	9	9	9	12	11
					Mean Rank for each area							
Academic	6.0	7.5	7.0	4.2	4.7	4.2	8.0	6.5	6.8	6.8	4.7	4.8
Work-related	10.0	9.6	9.8	10.2	10.6	10.6	8.0	9.0	8.6	8.6	10.4	10.0
Personal	10.0	8.6	9.0	12.0	11.0	11.6	9.6	10.4	10.4	10.4	11.2	11.4

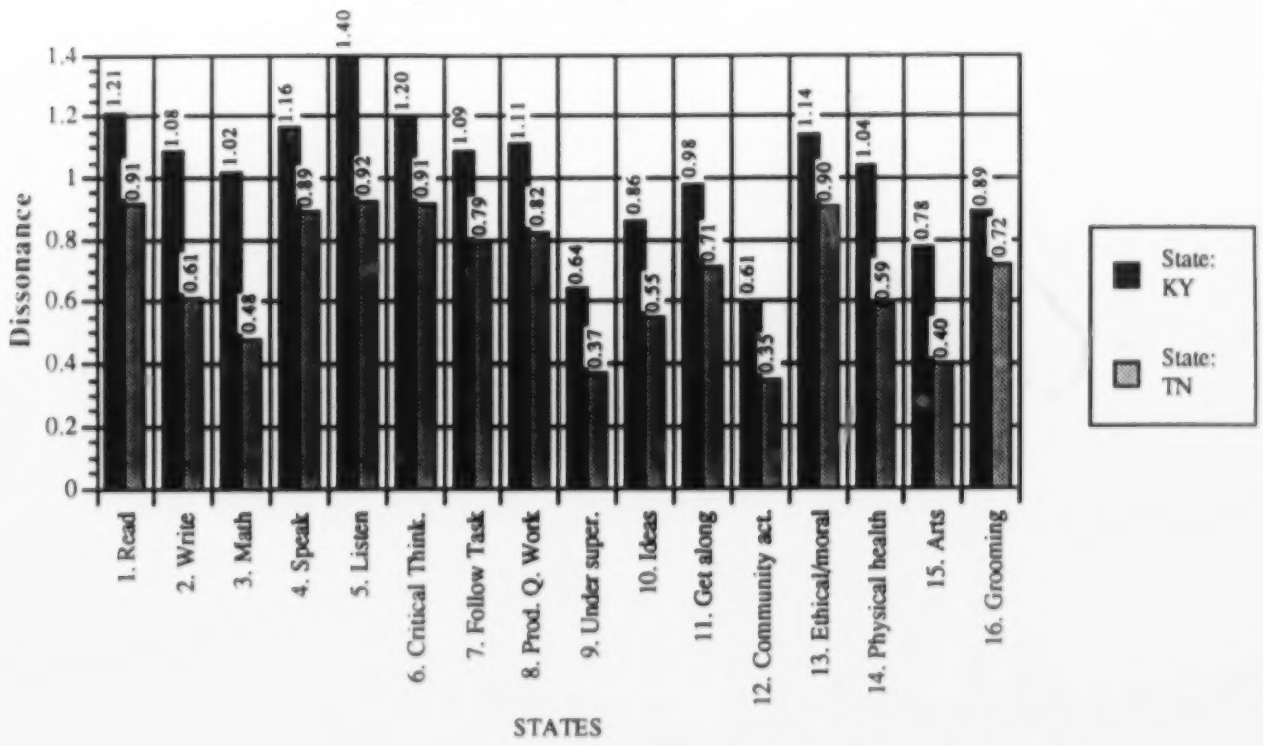
APPENDIX E-1


Dissonance
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
0.69 0.87
0.46 0.47
0.83 0.46
0.76 0.86
0.87 0.73
0.66 0.61
0.60 0.62
0.59 0.66
0.26 0.42
0.51 0.45
0.84 0.85
0.33 0.41
0.68 0.76
0.73 0.73
0.21 0.40
0.68 0.94
1. Read
2. Write
3. Math
4. Speak
5. Listen
6. Critical Think.
7. Follow Task
8. Prod. Q. Work
9. Under super.
10. Ideas
11. Get along
12. Community act.
13. Ethical/moral
14. Physical health
15. Arts
16. Grooming
STUDENT
ST: KY
ST: TN

Dissonance
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
1.73 1.30
1.70 1.25
1.34 1.01
1.64 1.31
1.94 1.56
1.84 1.73
1.51 1.25
1.69 1.26
0.99 0.56
1.06 0.92
0.94 0.79
0.52 0.70
1.58 1.25
1.11 0.92
1.02 1.07
0.82 0.81
1. Read
2. Write
3. Math
4. Speak
5. Listen
6. Critical Think.
7. Follow Task
8. Prod. Q. Work
9. Under super.
10. Ideas
11. Get along
12. Community act.
13. Ethical/moral
14. Physical health
15. Arts
16. Grooming
TEACHERS
TE: KY
TE: TN

APPENDIX E-2


Dissonance
1.4
1.2
1
0.8
0.6
0.4
0.2
0
1.35 0.99
0.78 0.73
0.87 1.07
0.96 0.61
1.04 1.05
0.78 0.86
1.30 0.97
1.13 0.92
0.38 0.52
0.83 0.83
1.00 0.66
0.52 0.54
1.35 1.11
0.91 0.44
0.39 0.64
0.87 0.76
1. Read
2. Write
3. Math
4. Speak
5. Listen
6. Critical Think.
7. Follow Task
8. Prod. Q. Work
9. Under super.
10. Ideas
11. Get along
12. Community act.
13. Ethical/moral
14. Physical health
15. Arts
16. Grooming
BL: KY
BL: TN
BUSINESS LEADERS


Dissonance
1.4
1.2
1
0.8
0.6
0.4
0.2
0
1.21 0.91
1.08 0.61
1.02 0.48
1.16 0.89
1.40 0.92
1.20 0.91
1.09 0.79
1.11 0.82
0.64 0.37
0.86 0.55
0.98 0.71
0.61 0.35
1.14 0.90
1.04 0.59
0.78 0.40
0.89 0.72
1. Read
2. Write
3. Math
4. Speak
5. Listen
6. Critical Think.
7. Follow Task
8. Prod. Q. Work
9. Under super.
10. Ideas
11. Get along
12. Community act.
13. Ethical/moral
14. Physical health
15. Arts
16. Grooming
State: KY
State: TN
STATES